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NEWS 5 JAN 16 WPIDS/WPINDEX/WPIX enhanced with revised CAS roles

NEWS 6 JAN 22 CA/Captus enhanced with patent applications from India

NEWS 7 JAN 29 PHAR enhanced with new search and display fields

NEWS 8 JAN 29 CAS Registry Number crossover limit increased to 300,000 in multiple databases

NEWS 9 PATDPASPC enhanced with Drug Approval numbers

NEWS 10 FEB 15 RUSSPAT enhanced with pre-1994 records

NEWS 11 FEB 23 KOREAPAT enhanced with IPC 8 features and functionality

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NEWS 13 FEB 26 ENBASE enhanced with Clinical Trial Number field

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NEWS 19 MAR 16 MARPAT now updated daily

NEWS 20 MAR 20 LWPI reloaded

NEWS 21 MAR 20 DISCLOSURE reloaded with enhancements

NEWS 22 MAR 30 JICST-BELUS removed from database clusters and STN

NEWS 23 APR 02 GENBANK reloaded and enhanced with Genome Project ID field

NEWS 24 APR 30 CHEMCATS enhanced with 1.2 million new records

NEWS 25 APR 30 CA/Captus enhanced with 1870-1889 U.S. patent records

NEWS 26 APR 30 INPADOC replaced by INPADOCDB on STN

NEWS 27 APR 30 New CAS web site launched

NEWS 28 MAY 01 DISCLOSURE on STN Easy enhanced with new search and display fields

NEWS 29 MAY 08 BIOSIS reloaded and enhanced with archival data

NEWS 30 MAY 14 TOXCENTER enhanced with BIOSIS reloaded

NEWS 31 MAY 21 CA/Captus enhanced with additional kind codes for German patents

NEWS 32 MAY 21 CA/Captus enhanced with IPC reclassification in Japanese patents

NEWS 33 MAY 22

NEWS 34

NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT MACINTOSH VERSION IS V6.0c (ENG) AND V6.0Jc (JP), AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

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=> s mirkin m?/au
L1 79 MIRKIN M?/AU

=> s bard a?/au
L2 817 BARD A?/AU

=> s l1 and l2
L3 27 L1 AND L2

=> s analytical chemistry/jt
L4 27764 ANALYTICAL CHEMISTRY/JT (ANALYTICAL CHEMISTRY/JT)

=> s l3 and l4
L5 3 L3 AND L4

=> d l5 1-3 ibib abs

L5 ANSWER 1 OF 3 SCISEARCH COPYRIGHT (c) 2007 The Thomson

Full Text Corporation on STN

ACCESSION NUMBER: 1993-285189 SCISEARCH

TITLE: SCANNING ELECTROCHEMICAL MICROSCOPY .19. ION-SELECTIVE POTENTIOMETRIC MICROSCOPY

AUTHOR: HORROCKS B R (Reprint); MIRKIN M V; PIERCE D T; BARD A J; NAGY G; TOH K

CORPORATE SOURCE: UNIV TEXAS, DEPT CHEM & BIOCHEM, AUSTIN, TX 78712; TECH UNIV BUDAPEST, INST GEN & ANALYT CHEM, H-1521 BUDAPEST, HUNGARY

COUNTRY OF AUTHOR: USA; HUNGARY

SOURCE: ANALYTICAL CHEMISTRY, (1 MAY 1993) Vol. 65, No. 9, pp. 1213-1224.

ISSN: 0003-2700.

PUBLISHER: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: PHYS; LIFE

LANGUAGE: English

REFERENCE COUNT: 40

ENTRY DATE: Entered STN: 1994

Last Updated on STN: 1994

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Potentiometric pH selective tips for scanning electrochemical microscopy (SECM) have been developed and used to image local pH changes in a variety of model chemical systems. Images of pH profiles around a platinum microelectrode during water reduction, a corroding disk of silver iodide in aqueous potassium cyanide, a disk of immobilized urease hydrolyzing urea, and a disk of immobilized yeast cells in glucose solution were obtained. A simple method for fabricating antimony microdisk electrodes suitable for use in SECM is described. The general theory for SECM with potentiometric ion selective tips is also presented, assuming that the tip is a purely passive sensor. Reasonable agreement of theory was observed for relatively large tip to surface separations. The deviations observed at small separations were due to shielding of the surface by the tip and, consequently, were found to be much less significant for smaller tips.

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Full Text

ACCESSION NUMBER: 1992:588288 SCISEARCH

THE GENUINE ARTICLE: J0527

TITLE: SIMPLE ANALYSIS OF QUASI-REVERSIBLE STEADY-STATE VOLTAMMOGRAMS

AUTHOR: MIRKIN M V (Reprint); BARD A J

CORPORATE SOURCE: UNIV TEXAS, DEPT CHEM & BIOCHEM, AUSTIN, TX 78712

COUNTRY OF AUTHOR: USA

ENTRY DATE: ANALYTICAL CHEMISTRY, (1 OCT 1992) Vol. 64, No. 19, pp. 2293-2302.

PUBLISHER: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036.

DOCUMENT TYPE: ISSN: 0003-2700.

FILE SEGMENT: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 25

ENTRY DATE: Entered STN: 1994

AB The kinetic parameters (k-degrees and alpha) of a complicated quasi-reversible electrochemical reaction studied by any steady-state voltammetric technique can be found directly from the values of two easily accessible experimental parameters, (E1/4 - E1/2) and (E1/2 - E3/4), where E1/2 is the experimental half-wave potential and E1/4 and E3/4 are voltammetric quartile potentials. For any type of steady-state (or pseudo-steady-state) current-potential curve obtained with a uniformly accessible working electrode, e.g., voltammetry at a rotating disk or hemispherical microelectrode, polarography, sample current voltammetry, and thin-layer voltammetry, a table is given which shows the kinetic parameters, i.e., standard rate constant, k-degrees, and the transfer coefficient, alpha, and also the formal potential, E-degrees, from the two above experimental values. An analogous table is presented for the nonuniformly a microdisk electrode. Unlike previously reported approaches, an independent evaluation of the standard (formal) potential is unnecessary. This analysis also does not rely on values of the electrode surface area and the bulk concentration of electroactive species which usually decrease the accuracy of the results. The application of the proposed methodology to other electrochemical systems including scanning electrochemical microscopy (SECM) and ultramicroelectrodes shaped as a cone or spherical segment is also discussed.

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Full text

Accession Number: 1991:138385 SCISEARCH

THE GENUINE ARTICLE: FA188

TITLE: VOLTAMMETRIC METHOD FOR THE DETERMINATION OF BOROHYDRIDE CONCENTRATION IN ALKALINE AQUEOUS-SOLUTIONS

AUTHOR: MIRKIN M V (Reprint); BARD A J

CORPORATE SOURCE: UNIV TEXAS, DEPT CHEM, AUSTIN, TX 78712

COUNTRY OF AUTHOR: USA

ENTRY DATE: ANALYTICAL CHEMISTRY, (1 MAR 1991) Vol. 63, No. 5, pp. 532-533.

PUBLISHER: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036.

DOCUMENT TYPE: ISSN: 0003-2700.

FILE SEGMENT: Note; Journal

LANGUAGE: English

REFERENCE COUNT: 8

ENTRY DATE: Entered STN: 1994

AB The development of proton exchange membrane and direct methanol fuel cell stacks is now well advanced for many applications. However, the significant performance advantages that these have over the battery for small to moderate scale applications will not be realised until a reliable fuel source has been developed. The deficiencies of the PEMFC and DMFC can be eliminated by cation or anion-conducting membranes incorporated into a direct sodium borohydride fuel cell (DSBFC). The characterisation of membranes for the DSBFC is discussed. Novel membranes have been prepared which have resistance of an equal magnitude to the commercially available Nafion(RR) membrane. Crown Copyright 0 2005 Published by Elsevier B.V. All rights reserved.

=> sel L5 3 CIT

E1 THROUGH E1 ASSIGNED

=> s E1

L6 17 "MIRKIN M V, 1991, V63, P532, 2"/RE

("MIRKIN M V, 1991, V63, P532, 2"/RE)

=> d 16 1-17 1bib abs

L6 ANSWER 1 OF 17 SCISEARCH COPYRIGHT (c) 2007 The Thomson

Full text

Corporation on STN

ACCESSION NUMBER: 2007:347607 SCISEARCH

THE GENUINE ARTICLE: 143PW

TITLE: Evaluation of new ion exchange membranes for direct borohydride fuel cells

AUTHOR: Cheng H (Reprint); Scott K; Lovell K; Horsfall J A; Waring S C

CORPORATE SOURCE: Univ Newcastle Upon Tyne, Sch Chem Engrg & Adv Mat, Newcastle Upon Tyne NE1 7RU, Tyne & Wear, England (Reprint); Cranfield Univ, Dept Mat & Med Sci, Swindon SN6 8LA, Wilts, England

COUNTRY OF AUTHOR: England

SOURCE: JOURNAL OF MEMBRANE SCIENCE, (1 FEB 2007) Vol. 288, No. 1-2, pp. 168-174.

PUBLISHER: ISSN: 0376-7388.

DOCUMENT TYPE: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.

LANGUAGE: Article; Journal

REFERENCE COUNT: English

ENTRY DATE: 29

AB Several radiation grafted ion exchange membranes were prepared and evaluated in half-cells and direct borohydride fuel cells (DBFC) using voltammetric and steady-state polarisation techniques. The peak power density of 112 mW cm⁻² was achieved in a DBFC with an ETFE-g-PSSA membrane using a solution of 1.32 M sodium borohydride and 2.5 M sodium hydroxide, 1 bar oxygen at 85 degrees C. The chemical and mechanical stabilities of the membranes were tested under various conditions. The membrane performance was compared to that obtained with the benchmark Nafion(RR) 217 membrane. The results are discussed based on the electrical, chemical structural and mechanical properties of the membranes. (c) 2006 Elsevier B.V. All rights reserved.

Entered STN: 5 Apr 2007

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L6 ANSWER 2 OF 17 SCISEARCH COPYRIGHT (c) 2007 The Thomson

Full text

Accession Number: 2007:32826 SCISEARCH

THE GENUINE ARTICLE: 116SB

TITLE: The direct borohydride fuel cell for UVV propulsion power

AUTHOR: Lakernan J B; Rose A (Reprint); Poynton K D; Browning D J; Lovell K V; Waring S C; Horsfall J A

CORPORATE SOURCE: Datl Porton Down, Phys Sci, Salisbury SP4 0OR, Wilts, England (Reprint); Cranfield Univ, Dept Mat & Med Sci, Swindon SN6 8LA, Wilts, England

COUNTRY OF AUTHOR: England

SOURCE: JOURNAL OF POWER SOURCES, (22 NOV 2006) Vol. 162, No. 2, Sp. Iss. SI, pp. 765-772.

PUBLISHER: ISSN: 0378-7753.

DOCUMENT TYPE: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.

LANGUAGE: Article; Journal

REFERENCE COUNT: English

ENTRY DATE: 6

AB The development of proton exchange membrane and direct methanol fuel cell stacks is now well advanced for many applications. However, the significant performance advantages that these have over the battery for small to moderate scale applications will not be realised until a reliable fuel source has been developed. The deficiencies of the PEMFC and DMFC can be eliminated by cation or anion-conducting membranes incorporated into a direct sodium borohydride fuel cell (DSBFC). The characterisation of membranes for the DSBFC is discussed. Novel membranes have been prepared which have resistance of an equal magnitude to the commercially available Nafion(RR) membrane. Crown Copyright 0 2005 Published by Elsevier B.V. All rights reserved.

Entered STN: 11 Jan 2007

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

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Accession Number: 2007:32826 SCISEARCH

THE GENUINE ARTICLE: 116SB

TITLE: The direct borohydride fuel cell for UVV propulsion power

AUTHOR: Lakernan J B; Rose A (Reprint); Poynton K D; Browning D J; Lovell K V; Waring S C; Horsfall J A

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COUNTRY OF AUTHOR: England

SOURCE: JOURNAL OF POWER SOURCES, (22 NOV 2006) Vol. 162, No. 2, Sp. Iss. SI, pp. 765-772.

PUBLISHER: ISSN: 0378-7753.

DOCUMENT TYPE: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.

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Entered STN: 11 Jan 2007

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AUTHOR: Lakernan J B; Rose A (Reprint); Poynton K D; Browning D J; Lovell K V; Waring S C; Horsfall J A

CORPORATE SOURCE: Datl Porton Down, Phys Sci, Salisbury SP4 0OR, Wilts, England (Reprint); Cranfield Univ, Dept Mat & Med Sci, Swindon SN6 8LA, Wilts, England

COUNTRY OF AUTHOR: England

SOURCE: JOURNAL OF POWER SOURCES, (22 NOV 2006) Vol. 162, No. 2, Sp. Iss. SI, pp. 765-772.

PUBLISHER: ISSN: 0378-7753.

DOCUMENT TYPE: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.

LANGUAGE: Article; Journal

REFERENCE COUNT: English

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Accession Number: 2007:32826 SCISEARCH

THE GENUINE ARTICLE: 116SB

TITLE: The direct borohydride fuel cell for UVV propulsion power

AUTHOR: Lakernan J B; Rose A (Reprint); Poynton K D; Browning D J; Lovell K V; Waring S C; Horsfall J A

CORPORATE SOURCE: Datl Porton Down, Phys Sci, Salisbury SP4 0OR, Wilts, England (Reprint); Cranfield Univ, Dept Mat & Med Sci, Swindon SN6 8LA, Wilts, England

COUNTRY OF AUTHOR: England

SOURCE: JOURNAL OF POWER SOURCES, (22 NOV 2006) Vol. 162, No. 2, Sp. Iss. SI, pp. 765-772.

PUBLISHER: ISSN: 0378-7753.

DOCUMENT TYPE: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.

LANGUAGE: Article; Journal

REFERENCE COUNT: English

ENTRY DATE: 6

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 Corporation on STN
 ACCESSION NUMBER: 2006:1094009 SCISEARCH
 THE GENUINE ARTICLE: 10216G
 TITLE: Material aspects of the design and operation of direct borohydride fuel cells
 AUTHOR: Cheng H (Reprint); Scott K; Lovell K
 CORPORATE SOURCE: Univ Newcastle Upon Tyne, Sch Chem Engrg & Adv Mat, Newcastle Upon Tyne NE1 7RU, Tyne & Wear, England (Reprint); Cranfield Univ, Dept Mat & Med Sci, Swindon SN6 8LA, Wilts, England
 COUNTRY OF AUTHOR: hua.cheng@ncl.ac.uk
 SOURCE: ENGLAND
 PUBLISHER: FUEL CELLS, (OCT 2006) Vol. 6, No. 5, pp. 367-375.
 ISSN: 1615-6846.
 WILEY-VCH VERLAG GMBH, PO BOX 10 11 61, D-69451 WEINHEIM, GERMANY.
 DOCUMENT TYPE: Article; Journal
 LANGUAGE: English
 REFERENCE COUNT: 31
 ENTRY DATE: Last Updated on STN: 23 Nov 2006
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
 AB The direct borohydride fuel cell (DBFC) has attracted increasing interest as a potential high power source for mobile and portable applications. Engineering design plays an important role in the development of the DBFC. This paper reports data for the selection of anode cathode and membrane materials for the DBFC. The best DBFC performance is achieved with an Au anode, a Pt cathode, and a 3541P ion exchange membrane. The use of non-precious catalysts, e.g., Ag, leads to promising results.

Full Text
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 Corporation on STN
 ACCESSION NUMBER: 2006:975576 SCISEARCH
 THE GENUINE ARTICLE: 0900B
 TITLE: New borohydride fuel cell with multiwalled carbon nanotubes as anode: A step towards increasing the power output
 AUTHOR: Deshmukh K; Santhanam K S V (Reprint)
 CORPORATE SOURCE: Rochester Inst Technol, Ctr Mat Sci & Engrg, Rochester, NY 14623 USA (Reprint); Rochester Inst Technol, Dept Chem, Rochester, NY 14623 USA
 COUNTRY OF AUTHOR: kess@rit.edu
 SOURCE: USA
 PUBLISHER: JOURNAL OF POWER SOURCES, (22 SEP 2006) Vol. 159, No. 2, pp. 1084-1088.
 ISSN: 0378-7753.
 ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
 DOCUMENT TYPE: Article; Journal
 LANGUAGE: English
 REFERENCE COUNT: 41
 ENTRY DATE: Last Updated on STN: 20 Oct 2006
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
 AB A borohydride fuel cell has been constructed using a platinized anionic exchange membrane separating the anode and cathode. The MWNT was functionalized with carboxylic acid under nitric acid reflux. Platinum metal was subsequently incorporated into it by galvanostatic deposition. The platinized functionalized MWNT was characterized by thermogravimetric analysis, Fourier transform infrared spectrum, scanning electron microscope and X-ray diffraction. The fuel cell produced a voltage of 0.95 V at low currents and a maximum power density of 44mWcm⁻² at room temperature in 1M sodium borohydride in a 4 M sodium hydroxide medium. Another borohydride fuel cell under identical conditions using carbon as the anode produced a cell voltage of 0.90 V and power density of about 20 mW cm⁻². The improved performance of the MWNT is attributed to the higher effective surface area and catalytic activity. (c) 2006 Elsevier B.V. All rights reserved.

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 Corporation on STN
 ACCESSION NUMBER: 2006:838428 SCISEARCH
 THE GENUINE ARTICLE: 077JV
 TITLE: Kinetics of sodium borohydride direct oxidation and oxygen reduction in sodium hydroxide electrolyte - Part I. BH4- electro-oxidation on Au and Ag catalysts
 AUTHOR: Chatenet M (Reprint); Micoud F; Roche I; Chaignet E
 CORPORATE SOURCE: UJF, CNRS, ENESEG, INPG, UMR 5631, LEPMI, BP 75, F-38402 St Martin Dheres, France (Reprint); UJF, CNRS, ENESEG, INPG, UMR 5631, LEPMI, F-38402 St Martin Dheres, France
 COUNTRY OF AUTHOR: Marian.Chatenet@lepmi.inpg.fr
 SOURCE: FRANCE
 PUBLISHER: ELECTROCHIMICA ACTA, (28 JUL 2006) Vol. 51, No. 25, pp. 5459-5467.
 ISSN: 0013-4686.
 PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
 DOCUMENT TYPE: Article; Journal
 LANGUAGE: English
 REFERENCE COUNT: 35
 ENTRY DATE: Last Updated on STN: 15 Sep 2006
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
 AB The direct oxidation of sodium borohydride in concentrated sodium hydroxide medium has been studied by cyclic and linear voltammetry, chronoamperometry and chronopotentiometry for silver and gold electrocatalysts, either bulk and polycrystalline or nanodispersed over high area carbon blacks. Gold and silver yield rather complete utilization of the reducer: around 7.5 electrons are delivered on these materials versus 4 at the most for platinum as a result of the BH4- non-negligible hydrolysis taking place on this latter material. The kinetic parameters for the direct borohydride oxidation are better for gold than for silver. A strong influence of the ratio of sodium hydroxide versus sodium borohydride is found: whereas the theoretical stoichiometry does forecast that eight hydroxide ions are needed for each borohydride ion, our experimental results prove that a larger excess hydroxide ion is necessary in quasi-steady state conditions. When the above-mentioned ratio is unity (1 M NaOH and 1 M NaBH4), the tetrahydroborate ions direct oxidation is limited by the hydroxide concentration, and their hydrolysis is no longer negligible. The hydrolysis products are probably BH3OH- ions, for which gold displays a rather good oxidation activity. Additionally, silver, which is a weak BH4- oxidation electrocatalyst, exhibits the best activity of all the studied materials towards the BH3OH- direct oxidation.
 Finally, carbon-supported gold nanoparticles seem promising as anode material to be used in direct borohydride fuel cells. (c) 2006 Elsevier Ltd. All rights reserved.

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 Corporation on STN
 ACCESSION NUMBER: 2006:450013 SCISEARCH
 THE GENUINE ARTICLE: 035LR
 TITLE: Direct borohydride fuel cells
 AUTHOR: de Leon C P; Walsh F C (Reprint); Pletcher D; Browning D
 CORPORATE SOURCE: J. Lakeman J B
 CORPORATE SOURCE: Univ Southampton, Sch Engrg Sci, Electrochem Engrg Grp, Southampton SO17 1BJ Hants, England (Reprint); Univ Southampton, Sch Chem, Southampton SO17 1BJ Hants, England
 COUNTRY OF AUTHOR: F.L.walsh@soton.ac.uk
 SOURCE: ENGLAND
 PUBLISHER: JOURNAL OF POWER SOURCES, (21 APR 2006) Vol. 155, No. 2, pp. 172-181.
 ISSN: 0378-7753.
 ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
 DOCUMENT TYPE: General Review; Journal
 LANGUAGE: English

REFERENCE COUNT:
ENTRY DATE:

58
Entered STN: 11 May 2006
Last Updated on STN: 11 May 2006
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB fuel cells is reviewed. Electrochemical reactions are considered together with the importance of operating parameters on cell performance. The advances in technology necessary for a widespread testing and more application of borohydride fuel cells are highlighted. A comparison of borohydride and methanol fuel cells shows that both systems exhibit similar cell voltages, current and power densities despite that methanol cells operate at higher temperatures. The results are encouraging although more research is necessary, particularly in the synthesis of new electrocatalysts for borohydride oxidation. (c) 2006 Elsevier B.V. All rights reserved.

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Full Text
Corporation on STN
ACCESSION NUMBER: 2005:1233596 SCISEARCH
THE GENUINE ARTICLE: 989LC
TITLE: The electroanalytical determination of sodium borohydride using a gold electrode
AUTHOR: Celikhan H; Aydin H; Aksu M L (Reprint)
CORPORATE SOURCE: Gazi Univ, Gazi Educ Fac, Dept Chem Educ, TR-06500 Ankara, Turkey (Reprint); Gazi Univ, Arts & Sci Fac, Dept Chem, TR-06500 Ankara, Turkey
makso@gazi.edu.tr
COUNTRY OF AUTHOR: Turkey
SOURCE: TURKISH JOURNAL OF CHEMISTRY, (2005) Vol. 29, No. 5, pp. 519-524.
ISSN: 1300-0527.
PUBLISHER: SCIENTIFIC TECHNICAL RESEARCH COUNCIL TURKEY-TUBITAK, NISpetik BULVARI NO 221, KAVAKLIDERE, TR-06100 ANKARA, TURKEY.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 12
ENTRY DATE: Entered STN: 15 Dec 2005
Last Updated on STN: 29 Dec 2005
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB It was shown that square wave voltammetry, a technique with a much lower detection limit, could be successfully used in the detection of borohydride formed in alkaline medium. A Au electrode was found to be very suitable for this purpose. The detection limit was 3×10^{-5} M.

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Full Text
Corporation on STN
ACCESSION NUMBER: 2005:571184 SCISEARCH
THE GENUINE ARTICLE: 930HN
TITLE: Electrooxidation mechanisms and discharge characteristics of borohydride on different catalytic metal surfaces
AUTHOR: Dong H; Feng R X; Ai X P; Cao Y L; Yang H X (Reprint); Cha C S
CORPORATE SOURCE: Wuhan Univ, Dept Chem, Wuhan 430072, Peoples R China (Reprint)
acs@whu.edu.cn
COUNTRY OF AUTHOR: Peoples R China
SOURCE: JOURNAL OF PHYSICAL CHEMISTRY B, (2 JUN 2005) Vol. 109, No. 21, pp. 10896-10901.
ISSN: 1520-6106
PUBLISHER: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036
USA
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 16
ENTRY DATE: Entered STN: 9 Jun 2005
Last Updated on STN: 9 Jun 2005
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The electrooxidation behavior of BH₄⁻ on electrocatalytic Pt, hydrolytically active Ni, and noncatalytic Au electrodes were

comparatively reexamined and a more generalized reaction mechanism was proposed to explain the very different anodic properties of BH₄⁻ on the different metal electrodes. In this mechanism, the anodic reaction behavior of BH₄⁻ are determined by a pair of conjugated reactions: electrochemical oxidation and chemical hydrolysis of BH₄⁻, the relative rates of which depend on the anodic materials, applied potentials, and number of BH₄⁻ oxidation increases with the increased potential polarization, while the actual electron number of BH₄⁻ oxidation on Ni electrode is 4 at most due to the poor electrocatalytic activity of the oxidized Ni surface and the strong catalytic activity of metallic Ni for chemical recombination of the adsorbed H intermediate. On the hydrolytic -inactive Au surface, the anodic reaction of BH₄⁻ can proceed predominately through direct electrochemical oxidation, delivering a near 8e discharge capacity.

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Full Text
Corporation on STN
ACCESSION NUMBER: 2004:160546 SCISEARCH
THE GENUINE ARTICLE: 772XY
TITLE: Electrooxidation of borohydride on platinum and gold electrodes: implications for direct borohydride fuel cells
AUTHOR: Gyenge E (Reprint)
CORPORATE SOURCE: Univ British Columbia, Dept Chem & Biol Engr, 2215 Main Mall, Vancouver, BC V6T 1Z4, Canada (Reprint); Univ British Columbia, Dept Chem & Biol Engr, Vancouver, BC V6T 1Z4, Canada
COUNTRY OF AUTHOR: Canada
SOURCE: ELECTROCHIMICA ACTA, (1 MAR 2004) Vol. 49, No. 6, pp. 965-978.
ISSN: 0013-4686
PUBLISHER: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 29
ENTRY DATE: Entered STN: 27 Feb 2004
Last Updated on STN: 27 Feb 2004
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The electrochemical oxidation of BH₄⁻ in 2 M NaOH on Pt and Au (i.e. catalytic and non-catalytic electrodes, respectively, for BH₄⁻ hydrolysis accompanied by H₂ evolution) has been studied by cyclic voltammetry, chrono-techniques (i.e., potentiometry, amperometry, coulometry) and electrochemical impedance spectroscopy. In the case of Pt the cyclic voltammetry behaviour of BH₄⁻ is influenced by both, the catalytic hydrolysis of BH₄⁻ yielding H₂ (followed by electrooxidation of the latter at peak potentials between -0.7 and -0.9 V versus Ag/AgCl, KClstd) and direct oxidation of BH₄⁻ at more positive potentials, i.e., between -0.15 and -0.05 V. Thiourea (TU, 1.5 x 10⁻³ M) was an effective inhibitor of the catalytic hydrolysis associated with BH₄⁻ electrooxidation on Pt. Therefore, in the presence of TU, only the direct oxidation of BH₄⁻ has been detected, with peak potentials between -0.2 and 0 V. It is proposed that TU could improve the BH₄⁻ utilization efficiency and the coulombic efficiency of direct borohydride fuel cells using catalytic anodes. The electrooxidation of BH₄⁻ on Pt/TU is an overall four-electron process, instead of the maximum eight electrons reported for Au, and it is affected by adsorbed species such as BH₄⁻ (fractional surface coverage similar to 0.3), TU and possibly reaction intermediates. (C) 2003 Elsevier Ltd. All rights reserved.

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Full Text
Corporation on STN
ACCESSION NUMBER: 1999:509928 SCISEARCH
THE GENUINE ARTICLE: 211CU
TITLE: Inexpensive, in-situ monitoring of borohydride concentrations
AUTHOR: Amendola S; Onnerud P; Kelly M T; Binder M (Reprint)
CORPORATE SOURCE: Millennium Cell Co, 8 Cedar Brook Dr, Cranbury, NJ 08512 USA (Reprint); Millennium Cell Co, Cranbury, NJ 08512 USA
COUNTRY OF AUTHOR: USA

SOURCE: TALANTA, (14 JUN 1999) Vol. 49, No. 2, pp. 267-270.
ISSN: 0039-9140.
PUBLISHER: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 4
ENTRY DATE: Entered STN: 1999
Last Updated on STN: 1999
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS.
AB Ions in aqueous alkaline solutions containing perates can be easily and rapidly accomplished by simply measuring open circuit potentials of selected metals (relative to a suitable reference) immersed in these solutions. (C) 1999 Elsevier Science B.V. All rights reserved.

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Full Text
Corporation on STN
ACCESSION NUMBER: 1998:950448 SCISEARCH
THE GENUINE ARTICLE: 147GV
TITLE: Electroanalysis attempts of tetrahydroborates
AUTHOR: Gyenge E L (Reprint); Oloman C W
CORPORATE SOURCE: Univ British Columbia, Dept Chem Engr, Vancouver, BC V6T 1Z4, Canada (Reprint)
COUNTRY OF AUTHOR: Canada
SOURCE: JOURNAL OF APPLIED ELECTROCHEMISTRY, (OCT 1998) Vol. 28, No. 10, pp. 1147-1151.
ISSN: 0021-891X.
PUBLISHER: KLUWER ACADEMIC PUBL, VAN GODENIJCKSTRAAT 30, 3311 GZ DORDRECHT, NETHERLANDS.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 24
ENTRY DATE: Entered STN: 1998
Last Updated on STN: 1998

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Full Text
Corporation on STN
ACCESSION NUMBER: 1997:679526 SCISEARCH
THE GENUINE ARTICLE: XV103
TITLE: Scanning electrochemical microscopy. 35. Determination of diffusion coefficients and concentrations of Ru(NH3)6(3+) and methylene blue in polyacrylamide films by chronoamperometry at ultramicrodisk electrodes
AUTHOR: Pyo M (Reprint); Bard A J
CORPORATE SOURCE: UNIV TEXAS, DEPT CHEM & BIOCHEM, AUSTIN, TX 78712 USA
COUNTRY OF AUTHOR: USA
SOURCE: ELECTROCHIMICA ACTA, (1997) Vol. 42, No. 20-22, pp. 3077-3083.
ISSN: 0013-4686.
PUBLISHER: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD, ENGLAND OX5 1GB.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: English
REFERENCE COUNT: 22
ENTRY DATE: Entered STN: 1997
Last Updated on STN: 1997
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS.
AB The chronoamperometric response at an ultramicrodisk electrode (diameter = 25 µm) inserted into polyacrylamide (PAAm) gel films containing reducible electroactive species [Ru(NH3)6(3+)] and methylene blue (MB) was used to determine the diffusion coefficients (D) and concentrations (C) of these species using a previously proposed treatment of chronoamperometric data. The diffusion coefficients of MB and methylene blue were slightly smaller (75-95%) than the values for the same species in solution, demonstrating that the film environment is mainly an aqueous one contained within large polymer pores. The calculated concentrations were in good agreement with those used to cast the films. Complexes of MB with DNA were also examined in solution

and in a PAAM film. The diffusion coefficients in both cases were significantly smaller (similar to 23%) than those of MB alone. The results indicate that, with some limitations, the chronoamperometric response of films probed with an SECM tip can be used to determine both D and C with knowledge of only the ultramicrodisk radius. (C) 1997 Elsevier Science Ltd.

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Full Text
Corporation on STN
ACCESSION NUMBER: 1994:777713 SCISEARCH
THE GENUINE ARTICLE: PU984
TITLE: DETERMINATION OF THE ACTIVE HYDROGEN CONTENT IN PYRIDINE-BORANE COMPLEX BY SCHIFF-BASE REDUCTION AND HIGH-PERFORMANCE LIQUID-CHROMATOGRAPHY
AUTHOR: MORLEY J A (Reprint); ELROD L; BAUER J F
CORPORATE SOURCE: ABBOTT LABS, DEPT PHYS ANALYT CHEM, PPD, 1401 SHERIDAN RD, N CHICAGO, IL 60064 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: ANALYTICAL CHEMISTRY, (1 DEC 1994) Vol. 66, No. 23, pp. 4283-4287.
ISSN: 0003-2700.
PUBLISHER: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; Life
LANGUAGE: English
REFERENCE COUNT: 24
ENTRY DATE: Entered STN: 1994
Last Updated on STN: 1994
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS.
AB Borohydrides and borane complexes have been widely used as selective reducing agents in many chemical applications. In particular, the pyridine-borane complex (PBC, C5H5BH3) is very stable to hydrolysis and is an attractive reagent for large-scale reductions that are common in the pharmaceutical industry. This report describes a simple, rapid, and reproducible method for quantitating the active hydrogen content in PBC. The method exploits the ease with which Schiff bases are reduced by amine-boranes and uses high-performance liquid chromatography to quantitate the reduction product. The method is not affected by small amounts of extraneous moisture and can be carried out in common glassware. The potential application of the analytical procedure to other amine-borane complexes is also discussed.

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Corporation on STN
ACCESSION NUMBER: 1993:454929 SCISEARCH
THE GENUINE ARTICLE: LN361
TITLE: INDIRECT DETERMINATION OF TETRAHYDROBORATE (BH4-) BY GAS-DIFFUSION FLOW-INJECTION ANALYSIS WITH AMPEROMETRIC DETECTION
AUTHOR: NIKOLIC S D (Reprint); MILOSAVLJEVIC E B; HENDRIX J L; NELSON J H
CORPORATE SOURCE: UNIV BELGRADE, FAC MED, POB 550, YU-11001 BELGRADE, YUGOSLAVIA; UNIV NEVADA, MACKAY SCH MINES, DEPT CHEM, RENO, NV 89557; UNIV NEVADA, MACKAY SCH MINES, DEPT MET ENGN, RENO, NV 89557
COUNTRY OF AUTHOR: YUGOSLAVIA; USA
SOURCE: TALANTA, (AUG 1993) Vol. 40, No. 8, pp. 1283-1287.
ISSN: 0039-9140.
PUBLISHER: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: English
REFERENCE COUNT: 23
ENTRY DATE: Entered STN: 1994
Last Updated on STN: 1994
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS.
AB A rapid, indirect gas-diffusion flow injection analysis (fIA) method with amperometric detection has been developed for the selective and sensitive determination of tetrahydroborate (BH4-). The injected analyte

reduces arsenic(III) to arsine. The arsine formed diffuses through the PTFE (poly-tetrafluoroethylene) membrane and is quantified amperometrically at a platinum working electrode. The precision of the technique was better than a relative standard deviation of 2.1% at 60 μ M levels and better than 0.5% at 0.1 μ M, with a throughput of 60 samples/hr. The detection limit of the method was found to be 1 μ M (1.5 ng BH₄⁻) with a linear range up to 1 mM. The dynamic range extends over five orders of magnitude in BH₄⁻ concentration. The effects of working potential, concentration of As(III) and HCl in the reagent stream, type and flow rate of the acceptor solution, temperature and interferences on the FIA signals were studied.

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Corporation on STN
ACCESSION NUMBER: 1992:475537 SCISEARCH
THE GENUINE ARTICLE: JG901
TITLE: BOROHYDRIDE OXIDATION AT A GOLD ELECTRODE
AUTHOR: MIRKIN M V (Reprint); YANG H J; BARD A J
CORPORATE SOURCE: UNIV TEXAS, DEPT CHEM & BIOCHEM, AUSTIN, TX 78712 (Reprint)
COUNTRY OF AUTHOR: USA
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, (AUG 1992) Vol. 139, No. 8, pp. 2212-2217.
ISSN: 0013-4651.
ELECTROCHEMICAL SOC INC, 10 SOUTH MAIN STREET, PENNINGTON, NJ 08534.
Article: Journal
DOCUMENT TYPE: PHYS: ENGI
FILE SEGMENT: English
LANGUAGE: English
REFERENCE COUNT: 28
ENTRY DATE: Entered STN: 1994
Last Updated on STN: 1994
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS.

AB The multistage process of borohydride oxidation in an 8 e⁻ reaction to borate at a Au electrode has been studied by means of fast-scan cyclic voltammetry (CV) and scanning electrochemical microscopy (SECM). The total irreversibility of this process observed previously is shown to be a result of the presence of very unstable intermediates. CV measurements showed that at least two stages of the process are quasi-reversible, and the presence of a coupled homogeneous chemical reaction was proved by SECM. The rate constant for this reaction as well as the electrochemical kinetic parameters for the first stage of oxidation are evaluated using digital simulation. The adsorption of the electroactive species associated with the first two-electron stage of the oxidation becomes apparent at scan rates higher than 200 V/s. A very small fractional surface coverage (estimated to be less than 0.001) is shown to produce CV waves characteristic of adsorption- rather than diffusion-controlled processes. The second chemical stage of this process is much faster than the first. The oxidation of borohydride at a gold anode is shown to have a different mechanism than that proposed earlier for platinum electrode.

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Corporation on STN
ACCESSION NUMBER: 1992:378168 SCISEARCH
THE GENUINE ARTICLE: H2518
TITLE: DYNAMIC ELECTROCHEMISTRY - METHODOLOGY AND APPLICATION
AUTHOR: RYAN M D (Reprint); CHAMBERS J Q
CORPORATE SOURCE: UNIV TENNESSEE, DEPT CHEM, KNOXVILLE, TN 37996; MARQUETTE UNIV, DEPT CHEM, MILWAUKEE, WI 53233
COUNTRY OF AUTHOR: USA
ANALYTICAL CHEMISTRY, (15 JUN 1992) Vol. 64, No. 12, pp. R79-R116.
ISSN: 0003-2700.
AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036.
General Review; Journal
DOCUMENT TYPE: PHYS: LIFE
FILE SEGMENT: English
LANGUAGE: English
REFERENCE COUNT: 1216
ENTRY DATE: Entered STN: 1994
Last Updated on STN: 1994

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Full Text
Corporation on STN
ACCESSION NUMBER: 1991:400993 SCISEARCH
THE GENUINE ARTICLE: FV724
TITLE: DIRECT DETERMINATION OF DIFFUSION-COEFFICIENTS BY CHRONOAMPEROMETRY AT MICRODISK ELECTRODES
AUTHOR: CHENAUULT G (Reprint); MIRKIN M V; BARD A J
CORPORATE SOURCE: UNIV TEXAS, DEPT CHEM, AUSTIN, TX 78712
COUNTRY OF AUTHOR: USA
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, (25 JUN 1991) Vol. 308, No. 1-2, pp. 27-38.
ISSN: 0022-0728.
ELSEVIER SCIENCE SA LAUSANNE, PO BOX 564, 1001 LAUSANNE 1, SWITZERLAND.
Article: Journal
DOCUMENT TYPE: PHYS
FILE SEGMENT: English
LANGUAGE: English
REFERENCE COUNT: 21
ENTRY DATE: Entered STN: 1994
Last Updated on STN: 1994
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS.

AB The chronoamperometric response at a microdisk is used for the direct determination of the diffusion coefficient of an electroactive species. The method does not require knowledge of the bulk concentration and the number of electrons participating in the electrode reaction, and requires only a value for the disk radius. Subsequent determination of the number of electrons (n) for an electrode reaction or the concentration of electroactive species is also possible. This approach is demonstrated with the evaluation of the diffusion coefficient of Fe(CN)₆(4-) in KCl and that of borohydride ion in NaOH. In both cases, the values of n found remained constant over a wide time range and correspond to those expected for these processes.

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